

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
---------------------------------------------------------	------------------------------

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603858F Space-Based Radar Dem/Val
----------------------------------------------------------------------------------------	------------------------------------------------------------------

Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	45.402	172.625	327.732	466.189	502.738	1,177.645	1,549.951	Continuing	TBD
A004 SBR Concept and Technology Development	45.402	172.625	327.732	466.189	502.738	1,177.645	1,549.951	Continuing	TBD

In FY 2003, the Cost of War Transfer Account placed \$43.0M in S&T PE 0602500F for SBR support.

(U) A. Mission Description and Budget Item Justification

The 2001, Joint Requirements Oversight Council (JROC) validated, Multi-Theater Target Tracking Capability (MT3C) Mission Need Statement (MNS) established the requirement for continuous multi-theater surveillance, identification, tracking, and targeting of surface-moving targets. In November 2001, USD(AT&L) directed a focused requirements and risk reduction effort to provide a space element of a future air/space Intelligence, Surveillance, and Reconnaissance (ISR) system to satisfy the MT3C MNS.

The Space Based Radar (SBR) program is focused to mature technology and develop a Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) system capable of providing Moving Target Indication (MTI), Synthetic Aperture Radar (SAR) imaging, and High-Resolution Terrain Information (HRTI, formerly Digital Terrain and Elevation Data - DTED) capabilities over a large portion of the Earth on a near-continuous basis. The system will maximize utility to the tactical war fighters as well as national agencies through responsive tasking and timely data dissemination. The SBR system will allow military forces a 'deep-look' into denied areas of interest, on a non-intrusive basis without risk to personnel or resources. This can be done across the spectrum of conflict and simultaneously in multiple theaters which is not a currently existing capability.

Technology maturation, risk reduction, and concept development are essential elements of the SBR program definition. Investments in key risk areas are focused to mature technologies leading to component design and demonstration. Concept development activities have and will continue to focus on reducing risk, integrating technologies, and evaluating system level concepts within the broad range of the C4ISR architecture. Modeling and simulation will maximize the operational capabilities of the SBR system. The 2005 program continues, but is not limited to Technology Risk Reduction activities. The program will leverage National Reconnaissance Office (NRO), National Geospatial-Intelligence Agency (NGA, formerly National Imagery and Mapping Agency - NIMA), Defense Advanced Research Projects Agency (DARPA), and Air Force Research Laboratory (AFRL) activities to ensure both DoD and Intelligence Community requirements are captured in the baseline SBR effort.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACDP), because it involves evaluating integrated technologies in as realistic an operating environment as possible to assess the performance or cost reduction potential of advanced technology.

Exhibit R-2, RDT&E Budget Item Justification

DATE

February 2004

BUDGET ACTIVITY

04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE

0603858F Space-Based Radar Dem/Val

(U) **B. Program Change Summary (\$ in Millions)**

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Previous President's Budget	47.149	274.104	358.669
(U) Current PBR/President's Budget	45.402	172.625	327.732
(U) Total Adjustments	-1.747	-101.479	
(U) Congressional Program Reductions		-101.479	
Congressional Rescissions			
Congressional Increases			
Reprogrammings			
SBIR/STTR Transfer	-1.747		

(U) **Significant Program Changes:**

The FY 2004 Appropriations Bill reduced the President's Budget from \$274.104M to \$174.104M over concerns about schedule and technology maturity. As a result of the FY04 Appropriations Act, the Air Force adjusted the effort in FY05 by \$30M.

The USecAF approved the SBR Acquisition Decision Memorandum (ADM) on 19 August 2003 documenting Phase "A" Key Decision Point approval and allowing the SBR program to enter the study phase. The ADM recognized that on-going as well as planned risk reduction and concept definition efforts have been and will continue to enhance the technical maturity of the SBR program. In this context, the ADM adjusted the acquisition strategy to extract maximum benefit of the planned Phase A efforts.

In response to the mandate of the FY 2004 Authorization Act, the following two changes were made to the SBR program: 1) The acquisition strategy was modified to assure competition was maintained throughout Phase A, the acquisition strategy was again modified, albeit without additional funding to accommodate such competition, thereby stretching planned completion of the SBR study phase, and 2) The SBR study phase Request for Proposal (RFP) was updated to reflect coordination of SBR capabilities and concepts of operations to meet both military and Intelligence Community needs.

The cumulative impact of these budgetary and programmatic changes extended Phase A activities into FY 2006. The Phase A competing contractor activities includes concept studies, system architecture development, technology maturity assessments, requirements development, concept trade studies, test and evaluation strategy development and industrial capability assessment for key technologies and components, leading to the exploration of various alternatives to best fulfill the SBR mission requirements. The contractors will focus on affordability and propose achievable milestones leading to an operational system. The Air Force plans to compete the SBR Phase A activities and have the SBR KDP-B decision in the second quarter of FY 2006.

Exhibit R-2a, RDT&E Project Justification

DATE
February 2004

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)				PE NUMBER AND TITLE 0603858F Space-Based Radar Dem/Val			PROJECT NUMBER AND TITLE A004 SBR Concept and Technology Development		
Cost (\$ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
A004 SBR Concept and Technology Development	45.402	172.625	327.732	466.189	502.738	1,177.645	1,549.951	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

In FY 2003, the Cost of War Transfer Account placed \$43.0M in S&T PE 0602500F for SBR support.

(U) A. Mission Description and Budget Item Justification

The 2001, Joint Requirements Oversight Council (JROC) validated, Multi-Theater Target Tracking Capability (MT3C) Mission Need Statement (MNS) established the requirement for continuous multi-theater surveillance, identification, tracking, and targeting of surface-moving targets. In November 2001, USD(AT&L) directed a focused requirements and risk reduction effort to provide a space element of a future air/space Intelligence, Surveillance, and Reconnaissance (ISR) system to satisfy the MT3C MNS.

The Space Based Radar (SBR) program is focused to mature technology and develop a Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) system capable of providing Moving Target Indication (MTI), Synthetic Aperture Radar (SAR) imaging, and High-Resolution Terrain Information (HRTI, formerly Digital Terrain and Elevation Data - DTED) capabilities over a large portion of the Earth on a near-continuous basis. The system will maximize utility to the tactical war fighters as well as national agencies through responsive tasking and timely data dissemination. The SBR system will allow military forces a 'deep-look' into denied areas of interest, on a non-intrusive basis without risk to personnel or resources. This can be done across the spectrum of conflict and simultaneously in multiple theaters which is not a currently existing capability.

Technology maturation, risk reduction, and concept development are essential elements of the SBR program definition. Investments in key risk areas are focused to mature technologies leading to component design and demonstration. Concept development activities have and will continue to focus on reducing risk, integrating technologies, and evaluating system level concepts within the broad range of the C4ISR architecture. Modeling and simulation will maximize the operational capabilities of the SBR system. The 2005 program continues, but is not limited to Technology Risk Reduction activities. The program will leverage National Reconnaissance Office (NRO), National Geospatial-Intelligence Agency (NGA, formerly National Imagery and Mapping Agency - NIMA), Defense Advanced Research Projects Agency (DARPA), and Air Force Research Laboratory (AFRL) activities to ensure both DoD and Intelligence Community requirements are captured in the baseline SBR effort.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACDP), because it involves evaluating integrated technologies in as realistic an operating environment as possible to assess the performance or cost reduction potential of advanced technology.

(U) B. Accomplishments/Planned Program (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) Continued Technology Risk Reduction activities for Electronically Scanned Array (ESA) effort; continued on-board processing efforts; continued Battle Management Command, Control, Communications (BMC3) effort; and provided demonstration support.	9.980		

UNCLASSIFIED

Exhibit R-2a, RDT&E Project Justification	DATE February 2004
------------------------------------------------------	------------------------------

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603858F Space-Based Radar Dem/Val	PROJECT NUMBER AND TITLE A004 SBR Concept and Technology Development
-----------------------------------------------------------------------------------------------	-------------------------------------------------------------------------	---------------------------------------------------------------------------------------

(U) Continued requirements development for SBR system and operational requirements definition.	10.939		
(U) Began Concept Definition for candidate operational system	17.779		
(U) Continued program support: concept evaluation, schedule management, independent cost analysis, technical evaluation and source selection.	6.704		
(U) Continue Technology Risk Reduction activities on acceleration of Electronically Scanned Array (ESA) and on-board processing efforts that included end-to-end payload testbeds and development of alternative signal processing algorithms, expanded BMC3 effort that included interface identification and definition, and provided Advanced Conce Technology Demonstration (ACTD) support		73.973	
(U) Concept Definition continued with the award of two Phase A Concept Development contracts.		82.425	
(U) Continue SBR Phase A Concept Development efforts to include but not limited to up front, in-depth, system engineering, focused concept-specific risk reduction activities and alternative system reviews for two prime contractor with two payloads each.			304.382
(U) Program Support activities include but are not limited to acquisition planning, schedule management, requirements development, source selection, and financial management.		16.227	23.350
(U) Total Cost	45.402	172.625	327.732

(U) C. Other Program Funding Summary (\$ in Millions)

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
RDT&E - AF, PE 0602500F,									
(U) Multi-Disciplinary Space and Technology	41.211							0.000	41.211
(U) Other APPN									
(U) None									

(U) D. Acquisition Strategy

The Air Force will lead the SBR Joint Program Office (JPO) with the National Reconnaissance Office (NRO) and National Geospatial-Intelligence Agency (NGA, formerly National Imagery and Mapping Agency - NIMA) as the principal partners with other Service DoD, and Intelligence Community participation. The SBR JPO has received approval to conduct a source selection to award two contracts for concept development Phase A efforts. Contract Awards are planned for Spring 2004.

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis										DATE February 2004		
BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)					PE NUMBER AND TITLE 0603858F Space-Based Radar Dem/Val				PROJECT NUMBER AND TITLE A004 SBR Concept and Technology Development			
(U) Cost Categories (Tailor to WBS, or System/Item Requirements) (\$ in Millions)	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total</u> Prior to FY 2003 Cost	<u>FY</u> 2003 Cost	<u>FY</u> 2003 Award Date	<u>FY</u> 2004 Cost	<u>FY</u> 2004 Award Date	<u>FY</u> 2005 Cost	<u>FY</u> 2005 Award Date	<u>Cost to Complete</u>	<u>Total</u> Cost	<u>Target</u> Value of Contract
(U) <u>Product Development</u>												
Technology Risk Reduction Efforts	Various Contracts	Various		9.980		73.973				0.000	83.953	
Requirements Development	FFRDC/SETA and GSA Contracts	Various		10.939						0.000	10.939	
Concept Definition Phase A Concept	Competitive Various	Various Various		17.779		82.425				0.000	100.204	
Development/Technology Risk Reduction Activities	Contracts							304.382		Continuing	TBD	
Subtotal Product Development			0.000	38.698		156.398		304.382		Continuing	TBD	0.000
Remarks:												
(U) <u>Support</u>												
SMC, ESC, AFSPC, NRO & NGA	Various Contracts	Various		6.704		16.227		23.350		Continuing	TBD	
Subtotal Support			0.000	6.704		16.227		23.350		Continuing	TBD	0.000
Remarks:												
(U) <u>Test & Evaluation</u>												
N/A												0.000
Subtotal Test & Evaluation			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) <u>Management</u>												
N/A												0.000
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	0.000
Remarks:												
(U) Total Cost			0.000	45.402		172.625		327.732		Continuing	TBD	0.000

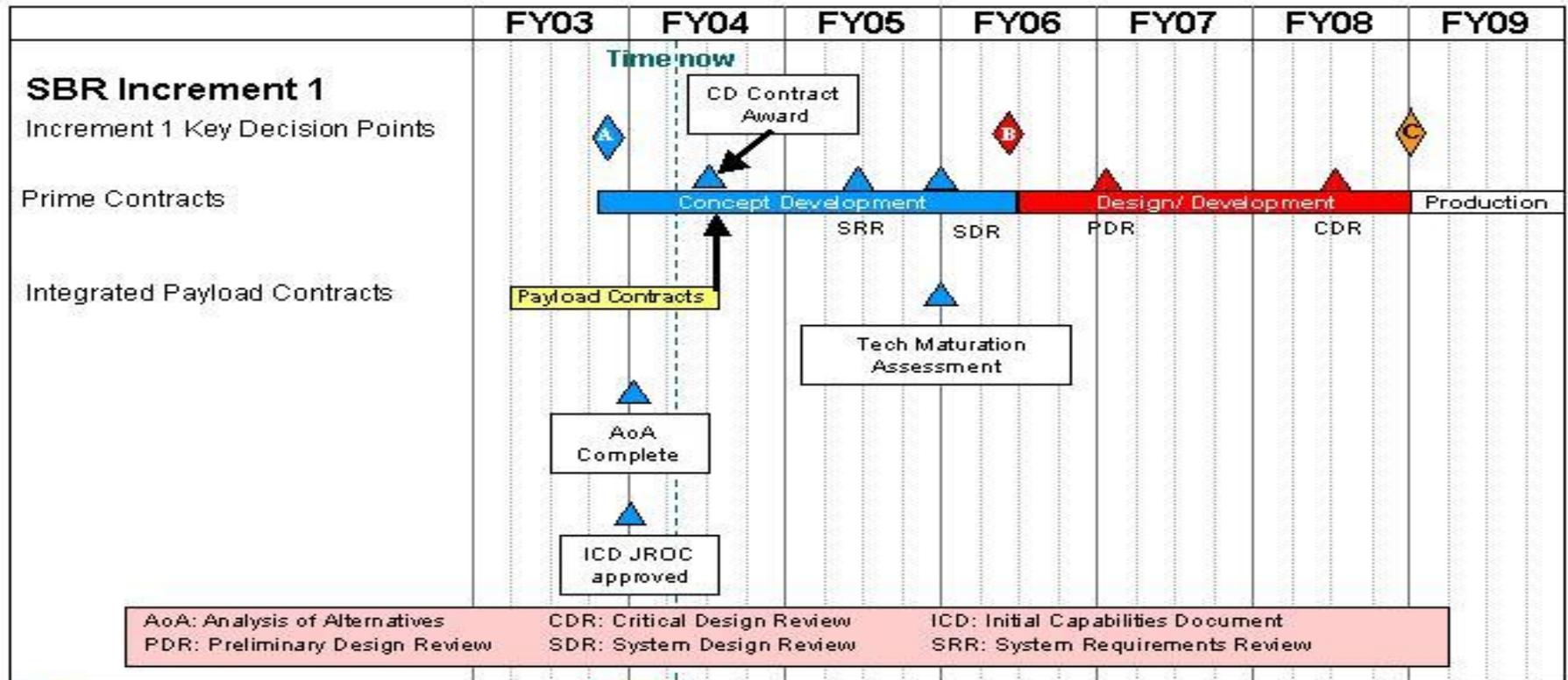
Exhibit R-4, RDT&E Schedule Profile

DATE
February 2004

BUDGET ACTIVITY
04 Advanced Component Development and Prototypes (ACD&P)

PE NUMBER AND TITLE
0603858F Space-Based Radar
Dem/Val

PROJECT NUMBER AND TITLE
A004 SBR Concept and Technology
Development



■ Concept Development

■ Design / development

△◇ Key events

□ Production / fielding

■ Integrated Payload Contract

Exhibit R-4a, RDT&E Schedule Detail	DATE February 2004
------------------------------------------------	------------------------------

BUDGET ACTIVITY 04 Advanced Component Development and Prototypes (ACD&P)	PE NUMBER AND TITLE 0603858F Space-Based Radar Dem/Val	PROJECT NUMBER AND TITLE A004 SBR Concept and Technology Development
-----------------------------------------------------------------------------------------------	-------------------------------------------------------------------------	---------------------------------------------------------------------------------------

	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
(U) <u>Schedule Profile</u>			
(U) Began Concept Definition	1Q		
(U) Initial CONOPs complete	2Q		
(U) Key Decision Point A (KDP-A)	4Q		
(U) ICD JROC Approved; Initial CONOPS JROC Coordinated	4Q		
(U) AoA Completion		1Q	
(U) GMTI AoA Final Report Published		2Q	
(U) RFP Release		2Q	
(U) Award Phase A Concept Development Contracts		3Q	
(U) System Requirements Review (SRR)			2Q
(U) Technical Maturity Assessment (TMA)			4Q
(U) System Design Review (SDR)			4Q